

Computed Radiography, e.g. PCR or other imaging plates**Dose Rate Control setting Optimus**

Select:

Optimus (XRG90) or Optimus C >> Program >> Dose Rate Control >>

>> AMPLIMAT >> Chamber 1...5 >> Data Set 1...5 >> DRC Handling: Start Automatic DRC Processing >>

<OK>

FILM:	Select from FILM.TDL :	IMAGING PLATES
SCREEN:	Select from SCREEN.TDL :	IMAGING PLATE
CHAMBER:	Select from CHAMBER.TDL :	the installed chamber type
CASSETTE:	Select from CASSETTE.TDL :	normal cassette(def)
SYSTEM CORRECTION:	Select from SYSCOR.TDL :	no corr.(ISO9236-1)
CORRECTION FACTOR:		1.00

Dose Rate Control

FILM : IMAGING PLATES ↓

SCREEN : IMAGING PLATE ↓

CHAMBER : 989000001614 Bucky ↓

CASSETTE : normal cassette(def) ↓

SYSTEM CORRECTION: no corr.(ISO9236-1) ↓

CORRECTION FACTOR: 1.00

< TRANSMIT > < CANCEL >

Transmit the screen with <F2>.

Call the same Data Set >> **DRC Handling: Start Automatic DRC Processing >>** again, but now use <ESC> to open the data set screen:

Data Set 1

Abbreviation: [R200]

Dose Request Chamber [µGy/U]: [5.24]

Dose of FSC [µGy]: [5.00]

kU70-Char. U_0 [kV]: [40]

kU70-Char. Drel_0: [1.59]

kU70-Char. U_1 [kV]: [50]

kU70-Char. Drel_1: [1.27]

kU70-Char. U_2 [kV]: [60]

kU70-Char. Drel_2: [1.06]

kU70-Char. U_3 [kV]: [70]

kU70-Char. Drel_3: [1.00]

kU70-Char. U_4 [kV]: [80]

kU70-Char. Drel_4: [0.94]

kU70-Char. U_5 [kV]: [90]

kU70-Char. Drel_5: [0.91]

kU70-Char. U_6 [kV]: [100]

kU70-Char. Drel_6: [0.89]

kU70-Char. U_7 [kV]: [120]

kU70-Char. Drel_7: [0.91]

kU70-Char. U_8 [kV]: [140]

kU70-Char. Drel_8: [0.94]

Two data fields can be modified, all others **must not** be changed:

Abbreviation: Any name up to six characters can be given. The abbreviation name should indicate the programmed speed type if different speeds shall be used with the same imaging plates.

Dose of FSC [µGy]: Use K_s explanation this page. The value can be adapted to the local "density taste".

All other data (kV70-Char. and RLF) **must** remain as they have been calculated during the programming and loading process to obtain the chamber type + imaging plate depending kV characteristic. RLF is constant = 1.

Formula to determine the **speed = S** of a film-screen-combination:

$$S = \frac{K_0}{K_s} = \frac{1000 \mu\text{Gy}}{\text{Dose of FSC } [\mu\text{Gy}]}$$

>> use speed as !! S = speed **must not** be mixed up !!
 >> abbreviation !! with S = *sensitivity PCR* !!
 >> name

K₀ is a constant with a value of 1000 μGy.

K_s is a variable value principally representing a switch off dose to obtain a density of 1.0 above base and fog, (normal films determined by the manufacturer of a film-screen system for defined processing conditions which are different in a computed RAD system). Can be adapted to the local "density taste"

If e.g. **K_s** = 5 μGy (like the example of the previous page)

$$S = \frac{1000 \mu\text{Gy}}{5 \mu\text{Gy}} = 200$$

Range of **speed values S** within the standard **speed class SC** systems:

only valid for film-screen-combinations for an optical density of 1.0		
Speed class SC Standard	dose / exposure [μGy] Standard class SC	Speed value S Range
6	167	5 - 9
12	83	10 - 18
25	40	20 - 36
50	20	40 - 71
100	10	80 - 140
200	5	160 - 280
400	2.5	320 - 560
800	1.25	630 - 1100
1600	0.625	1250 - 2200

If different speeds shall be used copy one screen with <F3> and load it to all other data sets of the chamber with <F4>. Change **Abbreviation** names and **Dose of FSC** values accordingly afterwards

More information available in booklet "Radiographic screens and films", manual order No. 4512 980 50592.